

Notice of Allowability

Application No.

10/091,479

Examiner

Michael Y. Won

Applicant(s)

RESCORLA ET AL.

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to After Final Amendment filed April 9, 2007 and Interview conducted on April 17, 2007.
2. ☒ The allowed claim(s) is/are 28-31 and 34-65 (renumbered 1-36).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date Attached.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. This action is in response to the amendment filed April 9, 2007.
2. Claim 44 has been amended.
3. Claims 28-31 and 34-65 have been examined and are pending with this action.

EXAMINER'S AMENDMENT

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
5. Authorization for this examiner's amendment was given in a telephone interview with Andy Mu (Reg. No. 58,216) on April 17, 2007.
6. The application has been amended as follows:
 28. **(Currently Amended)** A method for ~~Secure Sockets Layer (SSL)~~ clustered acceleration, comprising the steps of:
connecting at least two Secure Sockets Layer (SSL) ~~SSL~~ relays in a cluster;

establishing a communication path between a first node and a second node via a first SSL relay of the cluster, wherein the communication path includes an SSL connection between the first node and the first SSL relay;

transferring information between the first node and the first SSL relay, wherein the transferred information relates to a communication from the first node to the second node and wherein the transferred information includes a record;

transferring the information between the first SSL relay and the second node;
and

clustering state information of the communication path when the record has been acknowledged by the second node, the clustering comprising sharing the state information between the first SSL relay and at least a second SSL relay of the cluster, wherein the second SSL relay is capable of taking over communications between the first and second nodes upon failure of the first SSL relay.

44. (Currently Amended) ~~A system for clustered Secure Sockets Layer (SSL) acceleration~~ comprising:

a Secure Sockets Layer (SSL) relay cluster comprising at least two SSL relays,
wherein the SSL relay cluster is configured to:

establish a communication path between a first node and a second node
via a first SSL relay of the cluster, wherein the communication path includes an
SSL connection between the first node and the first SSL relay;

transfer information between the first node and the first SSL relay, wherein the transferred information relates to a communication from the first node to the second node and wherein the transferred information includes a record;

transfer the information between the first SSL relay and the second node;

and

cluster state information of the communication path when the record has been acknowledged by the second node, the clustering comprising sharing the state information between the first SSL relay and at least a second SSL relay of the cluster, wherein the second SSL relay is capable of taking over communications between the first and second nodes upon failure of the first SSL relay.

a first node;

a second node; and

an SSL relay cluster for connecting the first node and the second node

comprising:

a first SSL relay configured to cluster an SSL client handshake following reception of the SSL client handshake from the first node; and

a second SSL relay configured to transmit an acknowledgment to the first SSL relay after receiving update information from the first SSL relay;

wherein the first SSL relay is further configured to transmit a handshake acknowledgment message to the first node following reception of the acknowledgment from the second SSL relay.

46. **(Currently Amended)** A computer readable storage medium storing computer readable instructions that, when executed by a processor, perform a method comprising:

establishing a connection between a first node and a second node via a first Secure Sockets Layer (SSL) ~~SSL~~ relay of an SSL relay cluster, wherein said SSL relay cluster comprises at least two interconnected SSL relays and wherein the connection includes an SSL connection between the first SSL relay and the first node;

receiving a data communication from the first node, wherein at least a portion of the data communication is structured as a record;

transmitting the data communication to the second node;

receiving a first acknowledgment from the second node, wherein the first acknowledgment acknowledges the record;

following reception of the first acknowledgment, clustering state information of the established connection with at least a second SSL relay of the SSL relay cluster;
and

receiving a second acknowledgment from the at least second SSL relay in the SSL relay cluster confirming successful clustering.

47. **(Currently Amended)** The computer readable storage medium according to claim 46, wherein the second SSL relay assumes the first SSL relay's responsibilities upon failure of the first SSL relay.

48. **(Currently Amended)** The computer readable storage medium according to claim 46, wherein the first node comprises a client and the second node comprises a server.

49. **(Currently Amended)** An Secure Sockets Layer (SSL) ~~SSL relay, the SSL relay connected in a cluster of SSL relays,~~ comprising:

a first interface for transferring information between a first node and the SSL relay, wherein the SSL relay is connected in a cluster of SSL relays and wherein the first interface includes an SSL connection between the first node and the SSL relay and wherein the information includes record formatted data;

a second interface for transferring the information between a second node and the SSL relay;

a third interface for transferring state information between SSL relays in the cluster when the record formatted data has been acknowledged by the second node; and

a storage device, wherein state information of an SSL connection between the first node and the SSL relay is shared across each SSL relay in the cluster, any of the SSL relays in the cluster capable of taking over all connections of another SSL relay in the cluster, wherein the storage device is further configured to store the transferred information in a queue until acknowledgement is received from the second node.

55. **(Currently Amended)** The method of claim 28, further including ~~the steps of~~ setting a timer when the record is read, wherein the record is a partial record; and clustering the partial record if the timer expires.

57. **(Currently Amended)** The method of claim 28, further including ~~the step of~~ storing an unacknowledged portion of the information transferred between the first SSL relay and the second node in a queue.

59. **(Currently Amended)** The system of claim 44, wherein the update state information includes at least one of: a new TCP state, a current value of SSL handshake hashes and a handshake to enter upon failover.

60. **(Currently Amended)** The system of claim 44, wherein the handshake ~~acknowledgment message includes at least one of a server handshake and a server handshake completion message~~ first SSL relay is configured to transmit a handshake acknowledgment message to the first node.

61. **(Currently Amended)** The system of claim 60, wherein the handshake acknowledgment message includes at least one of: a server handshake and a server handshake completion message. ~~first node is configured to transmit a key exchange message once the server handshake completion message is received.~~

62. **(Currently Amended)** The computer readable storage medium of claim 46, further comprising additional instructions for ~~performing the steps of:~~

setting a timer when the record is read, wherein the record is a partial record; and clustering the partial record if the timer expires.

63. **(Currently Amended)** The computer readable storage medium of claim 62, wherein the timer corresponds to two times a packet interval time.

64. **(Currently Amended)** The computer readable storage medium of claim 46, further including ~~the step of~~ instructions for storing an unacknowledged portion of the data communication in a queue.

65. **(Currently Amended)** The computer readable storage medium of claim 64, wherein the data communication is stored in the queue with a cipher state associated with the record.

Allowable Subject Matter

7. Claims 28-31 and 34-65 are allowable over prior art of record and in light of the arguments presented in Amendment After-Final filed April 9, 2007 and the Examiner's Amendment above.

8. The following is an examiner's statement of reasons for allowance:

The prior art of record does not disclose, teach, or suggest neither singly nor in combination the claimed limitation of "clustering state information of the communication path when the record has been acknowledged by the second node, the clustering comprising sharing the state information between the first SSL relay and at least a second SSL relay of the cluster" as recited in independent claim 28 and similarly recited in independent claims 44, 46, and 49.

9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

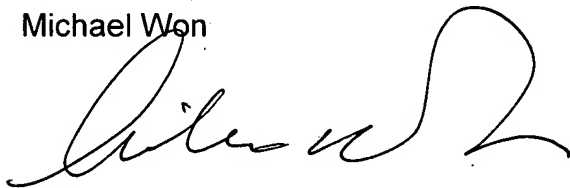
Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Y. Won whose telephone number is 571-272-3993. The examiner can normally be reached on M-Th: 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Won

A handwritten signature in black ink, appearing to read 'Michael Won', with a large, stylized flourish at the end.

April 17, 2007